

What is claimed is:

1. A coding apparatus comprising:

5 a CRC bit attachment means for carrying out CRC coding and adding CRC-bit to transmission data;

10 a code block segmentation processing means for dividing the transmission data with CRC-bit added into a plurality of code blocks based on the number of data of a minimum unit with CRC-bit added so that CRC-bit exists at the end of each code block; and

15 an error correcting coding means for carrying out error correcting coding on each code block after the division.

20 2. A coding apparatus according to claim 1, wherein said code block segmentation processing means inserts, when there is a code block whose number of data is smaller than other code blocks, a known data at the start position of the code block whose number of data is smaller so that the code block has the same number of data as other code blocks.

25 3. A decoding apparatus comprising:

error correcting decoding means for carrying out error correcting decoding in code block units on a reception signal that is made up of a plurality of code blocks each with CRC-bit placed at the end;

20 a dividing means for detecting the position of

concatenation of the code blocks subjected to error correcting decoding and dividing the concatenated code blocks based on this detection result; and

5 a CRC bit inspecting means for carrying out CRC bit cyclic redundancy inspection on each code block after the division.

4. A decoding apparatus according to claim 3, wherein said dividing means detects CRC-bit in the data subjected 10 to error correcting decoding and divides the data subjected to error correcting decoding into code blocks so that each detected CRC-bit is placed at the end of each code block.

15 5. A decoding apparatus according to claim 3 or claim 4, further comprising a deleting means for deleting, when a known data exists in a code block subjected to error correcting decoding, the known data.

20 6. A decoding apparatus according to any one of claim 3 to claim 5, wherein said error correcting decoding means replaces a soft decision value of the part of the known data of a code block with a maximum value of the soft decision value when the known data is 0 and replaces with 25 a minimum value of the soft decision value when the known data is 1 and carries out error correcting decoding of the known data using the replaced soft decision value.

7. A coding/decoding apparatus comprising the coding apparatus according to claim 1 or claim 2 and the decoding apparatus according to any one of claim 3 to claim 6.

5 8. A mobile station apparatus comprising the coding/decoding apparatus according to claim 7.

9. A base station apparatus comprising the coding/decoding apparatus according to claim 7.

10

10. A coding method comprising the steps of:

carrying out CRC coding and adding CRC-bit to transmission data;

dividing the transmission data with CRC-bit added
15 into a plurality of code blocks based on the number of data of a minimum unit with CRC-bit added so that CRC-bit exists at the end of each code block; and

carrying out error correcting coding on each code block after the division.

20

11. A coding method according to claim 10, wherein said dividing step inserts, when there is a code block whose number of data is smaller than other code blocks, a known data at the start position of the code block whose number 25 of data is smaller so that the code block has the same number of data as other code blocks.

12. A decoding method comprising the steps of:

carrying out error correcting decoding in code block units on a reception signal that is made up of a plurality of code blocks each with CRC-bit placed at the end;

detecting the position of concatenation of the code
5 blocks subjected to error correcting decoding and dividing the concatenated code blocks based on this detection result; and

carrying out CRC bit cyclic redundancy inspection on each code block after the division.

10

13. A decoding method according to claim 12, wherein said dividing step detects CRC-bit in the data subjected to error correcting decoding and divides the data subjected to error correcting decoding into code blocks so that
15 each detected CRC-bit is placed at the end of each code block.

14. A decoding method according to claim 12 or claim 13, further comprising a step of deleting, when a known data
20 exists in a code block subjected to error correcting decoding, the known data.

15. A decoding method according to any one of claim 12 to claim 14, wherein said error correcting decoding step
25 replaces a soft decision value of the part of the known data of a code block with a maximum value of the soft decision value when the known data is 0 and replaces with a minimum value of the soft decision value when the known

data is 1 and carries out error correcting decoding of the known data using the replaced soft decision value.

16. A coding/decoding method that decodes a signal coded
5 by the coding method according to claim 10 or claim 11
by the decoding method according to any one of claim 12
to claim 15.